



DEPARTMENT OF TRANSPORTATION  
HAZARDOUS MATERIALS REGULATIONS BOARD  
WASHINGTON, D.C. 20590

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[Docket No. HM-29; Amdts. 172-8, 173-44]

**PART 172—COMMODITY LIST OF  
EXPLOSIVES AND OTHER DANGEROUS  
ARTICLES CONTAINING THE  
SHIPPING NAME OR DESCRIPTION  
OF ALL ARTICLES SUBJECT TO  
PARTS 170-189 OF THIS CHAPTER**

**PART 173—SHIPPERS**

**Carbon Monoxide in Cylinders and  
Increased Filling Limitations**

The purpose of this amendment to the Hazardous Materials Regulations of the Department of Transportation is to authorize shipments of carbon monoxide in manifolded cylinders and to extend the filling limitation for carbon monoxide cylinders under specified conditions.

On July 25, 1969, the Hazardous Materials Regulations Board published a notice of proposed rule making, Docket No. HM-29; Notice No. 69-21 (34 F.R. 12291), proposing to amend the regulations as stated above.

Interested parties were invited to give their views on this proposal. Although the proposed change was based on several years of experience with a number of special permits, some commenters expressed reluctance to amend the rules, preferring instead that the permits be continued in effect. No specific data was submitted. Air Products and Chemicals, Inc., however, advised they were in the midst of a test project aimed at developing specific information on the corrosive effects of carbon monoxide on certain steels. The Board delayed action to see if this project, because of its greater specificity, would develop adverse information not discovered under the special permits.

On the basis of information it now has on file, including data from Air Products, the Board is satisfied that the permit, as issued, constitute a safe method of transportation. From the data received, it appears that the charging pressure to service pressure ratio originally proposed for manifolded cylinders is quite conservative. However, on the basis of the operating pressures authorized under permits, and the pressures used in testing, charging of cylinders is being limited to five-sixths the cylinder service pressure or 2,000 p.s.i., whichever is the lesser. The Board notes that Air Products and Chemicals, Inc., has not completed testing and may develop information justifying higher filling pressures in later rule making action.

Accordingly, 49 CFR Parts 172 and 173 amended as follows:

1. *Part 172.* In § 172.5 paragraph (a), the Commodity List is amended as follows:

§ 172.5 List of hazardous materials.

(a) \* \* \*

Article	Classed as—	Exemptions and packing (see sec.)	Label required if not exempt	Maximum quantity in 1 outside container by rail express
(Change)				
Carbon monoxide	F.G.	173.301, 173.302(f)	Red Gas	100 pounds.

II. *Part 173.* (A) In § 173.301, paragraph (d) (2) is amended to read as follows:

§ 173.301 General requirements for shipment of compressed gases in cylinders.<sup>1</sup>

(d) \* \* \*

(2) Manifolding is authorized for cylinders of the following nonliquefied gases: Boron trifluoride, carbon monoxide, ethylene, hydrogen, hydrocarbon gases, and methane, provided individual cylinders are equipped with approved safety relief devices as required by § 173.34(d) or § 173.315(i): And provided further, That each cylinder is equipped with individual shutoff valve, or valves, that must be tightly closed while in transit. Manifold branch lines to these and individual shutoff valves must be sufficiently flexible to prevent injury to the valves which otherwise might result from the use of rigid branch lines. A temperature measuring device may be

inserted in one cylinder of a manifold installation in place of the shutoff valve.

(B) In § 173.302, paragraph (f) is added to read as follows:

§ 173.302 Charging of cylinders with nonliquefied compressed gases.

(f) *Carbon monoxide.* Carbon monoxide must be shipped in specification 3A, 3AA, 3, or 3E (§§ 178.36, 178.37, 178.42) cylinders having minimum service pressure of 1,800 p.s.i.g. The pressure in the cylinder must not exceed 1,000 pounds per square inch gage at 70° F. except that if the gas is dry and sulfur free then cylinders may be charged up to five-sixths the cylinder service pressure or 2,000 p.s.i. whichever is the lesser.

(C) In § 173.304 paragraph (a) (2) the table is amended as follows:

§ 173.304 Charging of cylinders with liquefied compressed gas.

(a) \* \* \*  
(2) \* \* \*

Kind of gas	Maximum permitted filling density (see note 1)	Containers marked as shown in this column or of the same type with higher service pressure must be used except as provided in § 173.34 (a), (b), § 173.301(j) (See notes following table).
Cancel		
Carbon monoxide		DOT-3A1800; DOT-3AA1900; DOT-3; DOT-3E1800; The pressure in the cylinder must not exceed 1,000 pounds per square inch at 70° F.

(Secs. 831-835 of title 18, United States Code, sec. 9, Department of Transportation Act, 49 U.S.C. 1657, Title VI and sec. 902(h), Federal Aviation Act of 1958, 49 U.S.C. 1421-1430 and 1472(h))

This amendment is effective June 10, 1971, however, compliance with the regulations, as amended herein, is authorized immediately.

Issued in Washington, D.C., on March 17, 1971.

C. R. BENDER,  
Admiral, U.S. Coast Guard,  
Commandant.

CARL V. LYON,  
Acting Administrator,  
Federal Railroad Administration.

ROBERT A. KAYE,  
Director, Bureau of Motor Car-  
rier Safety Federal Highway  
Administration.

SAM SCHNEIDER,  
Board Member, for the  
Federal Aviation Administration.

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